

REMARKS

This Application has been carefully reviewed in light of the Final Office Action mailed July 1, 2003. At the time of the Final Office Action, Claims 41-61 were pending. Claims 1-18 were previously cancelled by Applicant. Claims 19-40 were previously withdrawn due to an election/restriction requirement. Claims 41-61 were rejected. Claim 41 is the only pending independent claim. Claim 41 has been amended to include the limitation of claims 49-55, 59 and 61. Claims 49-55 and 59-61 have been cancelled.

Rejections under 35 U.S.C. § 102

Claims 41-48 and 58-60 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 5,629,186 issued to Robert D. Yasukawa et al. (hereinafter "Yasukawa"). Claim 41 has been amended to further describe the porous material as having "mean pore diameters greater than about 10 microns," "a density equal to or greater than 6.0 pounds per cubic foot," and "wherein compounds selected from the group consisting of oligonucleotides, DNA, RNA, peptides, proteins, oligosaccharides, enzymes, receptors, and/or antibodies are bound to the material." As noted by the Examiner at pages 4-6 of the Office Action, "Yasukawa et al. and Lyles et al. teach devices and compositions, as previously discussed. However, the references do not teach immobilization of oligonucleotides or DNA.... DNA or RNA ... peptides ... proteins or antibodies." Consequently, it is respectfully submitted that the Examiner's 35 U.S.C. § 102 rejection over Yasukawa et al. has been overcome by the amendment and favorable action is requested thereon.

Rejections under 35 U.S.C. § 103

Claims 41-48 and 56-61 were rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being unpatentable over WO 96/24631 issued to Mark B. Lyles et al. (hereinafter "Lyles"). Claims 41-18 and 56-58 have been amended. Claims 59-61 have been cancelled. Claims 41-48 and 56-58 have been amended (i.e., independent claim 41 and the dependents 42-48 and 56-58) to include "wherein compounds selected from the group

consisting of oligonucleotides, DNA, RNA, peptides, proteins, oligosaccharides, enzymes, receptors, and/or antibodies are bound to the material.” As stated by the Examiner, neither of these references, Yasukawa, et al. or Lyles, et al. teach immobilization of oligonucleotides, DNA, RNA, peptides, proteins or antibodies. Consequently, the Applicant submits amended claims 41-48 and 56-58 are patentably distinct over Yasukawa et al. and Lyles et al. and requests favorable action thereon.

Claims 49-50 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Yasukawa or Lyles in view of U.S. Patent 5,843,767 issued to Kenneth L. Beattie (hereinafter "Beattie"). Claims 49-50 have been cancelled. However, the limitations of claims 49-50 have been included by this amendment in claim 41 as part of a markush group of compounds. U.S. Patent No. 5,843,767 to Beattie is cited by the Examiner as teaching “attachment of oligonucleotides and DNA to silicon dioxide (silica).” At Column 13, Beattie lists under Example 4, “Oligonucleotide Attachment to Glass/SiO₂.” Amended claim 41 (incorporating the elements of claims 49-50) is directed to a “material manufactured from alumina and a fusion source.” Beattie does not teach and/or suggest attaching an oligonucleotide to a “material manufactured from alumina and a fusion source,” and, as noted by the Examiner, neither do the Yasukawa et al. and the Lyles et al. references teach such attachment.

The Examiner concludes “because Beattie teaches that these molecules can be successfully attached to surfaces comprising silica,” that the claimed invention is *prima facie* obvious. It is respectfully submitted that such conclusion is not appropriate in light of the claims -- to be relevant and bar patentability, it is respectfully submitted that Beattie would have to teach or at least suggest that the molecules can be successfully attached to a material manufactured from “alumina and a fusion source.” Beattie teaches nothing in relation to materials comprising alumina and a fusion source, e.g. boron and as noted by the Examiner, neither Yasukawa et al. nor Lyles et al. cited “teach immobilization.” Consequently, the Applicant respectfully requests favorable action with respect to amended claim 41 (incorporating claims 49 and 50).

Claims 50-51 and 53 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Yasukawa or Lyles in view of U.S. Patent 6,139,831 issued to Ganaganor Visweswara Shivashandar et al. (hereinafter "Shivashandar"). The elements of claims 50-51 and 53 have been incorporated into amended claim 41 as part of a markush group. The examiner concluded the subject matter of old claims 50-51 and 53 are *prima facie* obvious because "Shivashandar et al. teach that these molecules can be successfully attached to surfaces comprising silica." New claim 41 (including claims 50-51 and 53) claims a material "manufactured from alumina and a fusion source." Therefore, it is respectfully submitted that Shivashandar et al.'s teaching of attaching DNA and RNA to glass or silicon dioxide suggests nothing in relation to attaching said compounds to a "material manufactured from alumina and a fusion source." And neither Yasukawa et al. nor Lyles et al. teach immobilization. Consequently, the Applicant submits claim 41 is patentably distinct over Shivashandar et al. alone and/or in combination with other art cited. Favorable action is requested.

Claim 52 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Yasukawa or Lyles in view of U.S. Patent 5,439,792 issued to James Blake et al. (hereinafter "Blake"). The element of claim 52 has been incorporated into the markush group of amended claim 41. Claim 41 is limited to bonding a compound, like a peptide, to a "material manufactured from alumina and a fusion source." The Examiner concluded the subject matter of claim 52 (now 41) was *prima facie* obvious "because Blake et al. teaches that peptides can be successfully attached to surfaces comprising silica." Blake et al. teaches nothing in relation to attaching peptides to a "material manufactured from alumina and a fusion source" as presently claimed and as stated by the Examiner, the Yasukawa et al. and Lyles et al. "references do not teach immobilization." Therefore, it is respectfully submitted that the subject matter of old claim 52 (as incorporated into 41) is patentably distinct over the art. Allowance is requested.

Claims 54-55 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Yasukawa or Lyles in view of U.S. Patent 5,874,047 issued to Michael Josef Schoning et al. (hereinafter "Schoning"). The subject matters of claims 54-55 have been incorporated into a markush grouping in amended claim 41. Claim 41 claims a device comprising a "material"

having bound thereto proteins and/or antibodies. The material claimed is “manufactured from alumina and a fusion source.” The Examiner concluded the subject matters of claim 54-55 were *prima facie* obvious “because Schoning et al. teach that proteins and antibodies can be successfully attached to surfaces comprising silica.” It is respectfully submitted that Schoning et al. do not teach and/or suggest anything in relation to the attachment of “protein and antibodies” to a “material manufactured from alumina and a fusion source.” And as noted, the Yasukawa et al. and Lyles et al. “references do not teach immobilization.” Favorable action is therefore requested.

Claims 56-57 and 61 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Yasukawa. The subject matter of claim 61 has been incorporated into amended claim 41. Claims 56 and 57 depend from amended claim 41. Amended claim 41 now includes the limitation that specified compounds are bound to the material. As stated by the Examiner, Yasukawa et al. do not teach or suggest immobilization. Consequently, the Applicant submits amended claims 41, 56 and 57 overcome the Examiner’s rejection and requests favorable action thereon.

CONCLUSION

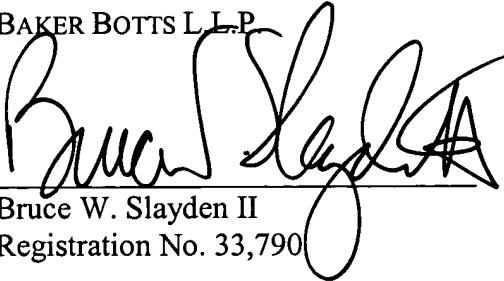
Applicant has made an earnest attempt to place this case in condition for allowance. For the foregoing reasons and for other reasons clearly apparent, Applicant respectfully requests reconsideration and full allowance of Claims 41-61, as amended.

The Commissioner is hereby authorized to charge any fees or credit any overpayment to Deposit Account No. 02-0383 of Baker Botts L.L.P.

If there are any matters concerning this application that may be cleared up in a telephone conversation, please contact Applicant's attorney at 512.322.2606.

Respectfully submitted,

BAKER BOTTS L.L.P.

A handwritten signature in black ink, appearing to read "Bruce W. Slayden II", is written over a horizontal line.

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